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Land Use Inventory Update and Projection Utica-Rome Air Quality Maintenance Area (AQMA)

Herkimer-Oneida Counties Comprehensive Planning Program

Prepared for

Environmental Protection Agency, New York Region II

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LAND USE INVENTORY UPDATE AND PROJECTION UTICA-ROME AIR QUALITY MAINTENANCE AREA

Environmental Protection Agency Region II
Air Branch: Environmental Programs Division
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The Utica-Rome AQMA consists of 14 Mohawk Valley towns and cities in Herkimer and Oneida Counties, New York. Land uses in the area were inventoried in 1968 as part of the Statewide Land Use Natrual Resource Inventory (LUNR). The present report updates the 1968 inventory to 1975 based upon aerial photo measurements of a sample of kilometer squares. Urban land uses are projected to 1980, 1985, 1990 and 2000. This information will be used by the New York State Department of Environmental Conservation to project future air quality.

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LAND USE INVENTORY UPDATE AND PROJECTION

UTICA-ROME AIR QUALITY MAINTENANCE AREA

By

Herkimer-Oneida Counties Comprehensive Planning Program
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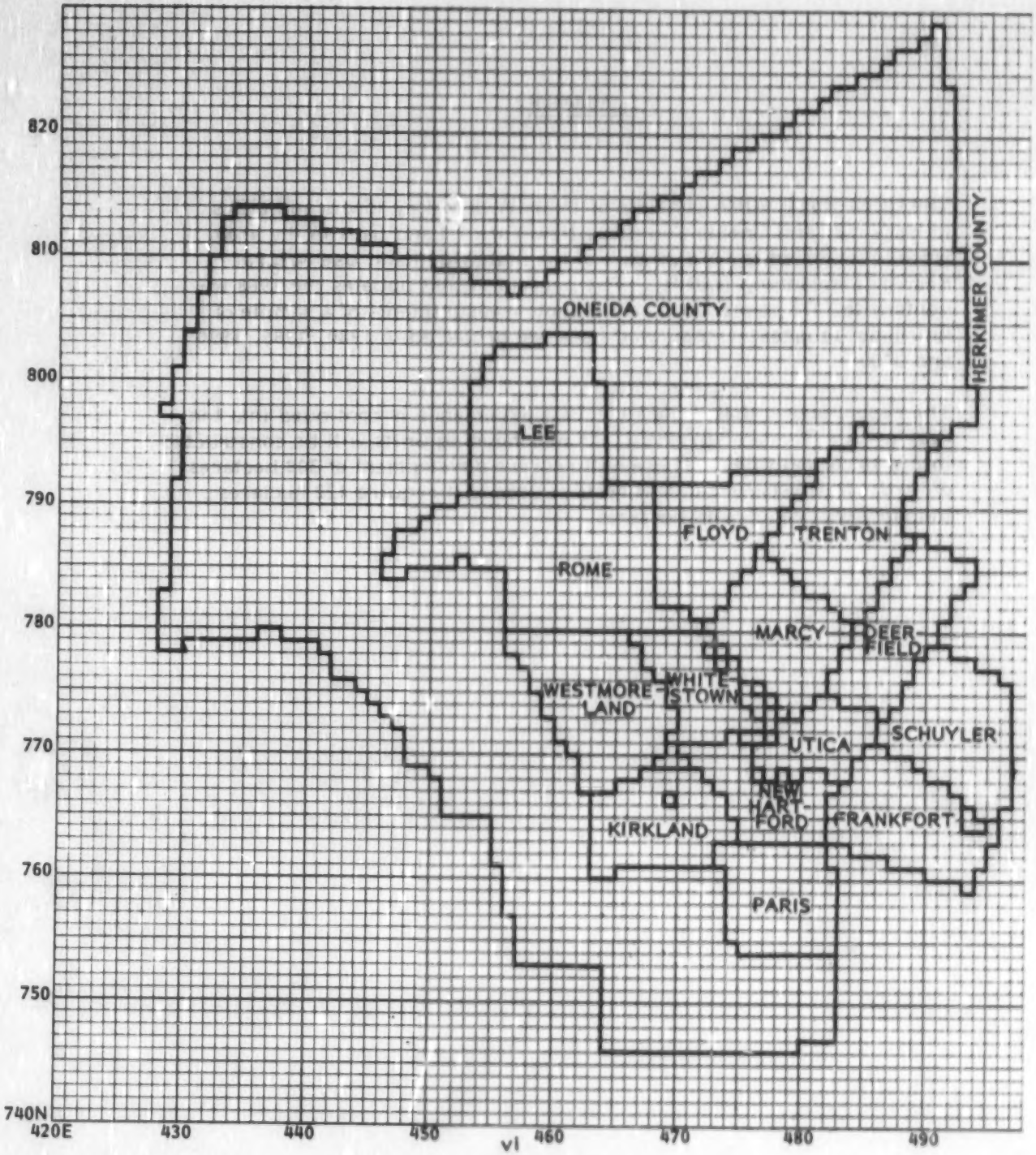
SUMMARY

The Utica-Rome AQMA consists of 14 Mohawk Valley towns and cities in Herkimer and Oneida Counties, New York. Land uses in the area were inventoried in 1968 as part of the Statewide Land Use Natural Resource Inventory (LUNR). The present report updates the 1968 inventory to 1975 based upon aerial photo measurements of a sample of kilometer squares. Urban land uses are projected to 1980, 1985, 1990 and 2000.

The report shows that if the 1970-1974 experience is continued into the future, in a five-year period 3,545 new housing units will be constructed in the 14 communities. These will require development of 308 hectares of land. New commercial and service uses will require 122 hectares. Industry will require 19 hectares.

UTICA ROME AIR QUALITY MAINTENANCE AREA

U.T.M. GRID



LAND USE INVENTORY UPDATE & PROJECTION
UTICA-ROME AIR QUALITY MAINTENANCE AREA

PURPOSE

As its part in the development of an Air Quality Maintenance Plan, the Herkimer-Oneida Counties Comprehensive Planning Program contracted with the Environmental Protection Agency to provide the State of New York Department of Environmental Conservation with a Land Use Inventory of the 14 communities in the AQMA for 1975, and projections of urban land use in the region to 1980, 1985, 1995, and 2000. The land use inventory consists of an update of the 1968 Land Use and Natural Resource Inventory carried out on a sampling basis, plus projections of urban land needs based upon the 1975 Population Projections prepared by the New York State Economic Development Board. The data compiled in this project was delivered to the New York State Department of Environmental Conservation on April 30, 1976. It consists of coding sheets. Each coding sheet represents a kilometer square in the statewide Natural Resources Inventory grid. Coding sheets were provided only for those kilometer squares in which past land use changes were measured, or those in which urban development was projected to take place. Land use changes were recorded by hectare (2.47 acre units). The first set of coding sheets indicates all of the significant conversion of rural to urban land which occurred between 1968 and 1975. The second set of coding sheets shows projected conversion for the projection years 1980, 1985, 1995 and 2000.

The report which follows discusses in further detail the preparation of this information and summarizes past and projected land use changes.

NEW YORK STATE'S LAND USE & NATURAL RESOURCES INVENTORY

The land use and natural resources inventory prepared by New York State for the Utica-Rome area in 1968, was a massive aerial photo interpretation project in which land areas in various uses were identified and marked on U.S.G.S. 7½ minute sheet overlays, and so called "point" data was identified and coded by UTM 1 kilometer grid location. The land use area information was measured and coded to the same 1 kilometer grid. This data was later placed in a computer record so that various kinds of summaries and analyses could be made.

In order to provide a land use data base for the Utica-Rome AQMA model, the regional planning program obtained a set of LUNR overlay sheets for all of the 7½ minute quadrangles needed to cover the AQMA, and a computer printout for each town and city in the AQMA. The region also obtained the most current NYS DOT up-dated planimetric 7½ minute sheets corresponding to these overlays. The program also obtained 1975 aerial photography of the AQMA at the same scale as the planimetric maps and overlays. In order to facilitate further analysis of developing areas, the program also obtained 400 ft./inch photo enlargements for selected parts of the AQMA.

In order to provide a measure of residential density, a field check of residential areas measured in the LUNR survey, was carried out and a count made in each sample area of housing units per hectare for the high density, medium density, and low density residential categories (Table 7).

The kilometer grid and air quality maintenance area boundaries were first marked on the NYS DOT 7½ minute planimetric sheets covering the AQMA. Then, by map inspection, staff identified locations where significant land use changes were known to have taken place since 1968. Such areas were marked for detailed inspection. These included areas where new commercial or industrial development had taken place, where new tract housing or apartments had been constructed, or where urban renewal projects were underway. Using the 1975 aerial photography, these key areas were examined and the urban land use changes from 1968 to 1975 were marked on an overlay. The extent of these changes were then measured and compared with the 1968 LUNR computer printout for each grid square. A new coding sheet was filled out indicating the change in land use code from 1968 to 1975. A summary of the changes noted through this process was made on a town basis, and later used in assigning projected land use changes. Some 70 kilometer squares were initially updated as a part of this process. In some cases, field checks were made to determine what new uses were actually in place. This land use update procedure attempted to identify all locations where significant land use changes had taken place. Because of time and money limitations, it did not attempt to record all conversions to urban land in the region. Later, when projected urban land needs were assigned to kilometer squares, additional kilometer squares were measured and adjustments made in the 1975 inventory. Table 6 shows, by town, the location of the 97 kilometer squares updated to 1975 in the course of making projections, and the 124 kilometer squares included in the projection to 2000.

The projection process is discussed in the section which follows. Following a projection of urban land uses and their assignment to locations in the AQMA, new coding sheets were prepared for each kilometer square where changes were reported. On single coding sheets, the changes projected for 1980, 1985, 1995 and 2000 were shown. The projected changes were summarized by town and that summary is included in this report. The coding sheets for both the land use update and the projection were transmitted to NYS DEC April 30, 1976.

TABLE I

POPULATION PROJECTION, HERKIMER & ONEIDA COUNTIES, N.Y.

	Herkimer	Oneida	SMSA
1970	67,633	273,037	340,670
1975	68,187	269,319	337,506
1980	67,715	265,747	333,462
1985	67,300	264,324	331,624
1990	66,832	264,238	331,070
1995	66,101	261,933	328,034
2000	65,362	258,564	323,926

Source: NYS Economic Development Board, 1975 (Preliminary)

PROJECTED URBAN LAND NEEDS

The 1975 projections of the New York State Economic Development Board for the Utica-Rome SMSA indicate a gradual loss of population through the year 2000. The 1970 Census reported the population of 340,670 in the Utica-Rome SMSA. Subsequent population estimates have indicated a reduction since that time. The New York State Department of Health estimated the regional population at 338,800 on July 1, 1974. The New York State Economic Development Board estimated the regional population at 337,506 in 1975 (Table 1). The state projections indicate a regional reduction to 334,000 in 1980, 332,000 in 1985, 331,000 in 1990, 328,000 in 1995, and 324,000 in 2000.

Such a population trend does not preclude futura urbanization and new construction. For example, during the period when the estimators showed a loss of population in the region of 3,164 persons, SMSA building permit records plus estimates show the creation of 5,153 new housing units (Table 2). During the same period, new commercial and industrial land uses were also created. Clearly, much of this new construction represents replacement of older residential, commercial and industrial facilities. Under normal economic conditions such replacement can be expected to continue even though there is a decline in total regional population.

During the five-years 1970-1974, 4,660 new housing units were authorized by building permits issued by communities in the Utica-Rome SMSA. The State Department of Commerce has made an allowance for construction in non-permit issuing areas and estimates that 5,153 housing units were constructed in that period. This new construction took place during a period of high interest rates and slack economic conditions. These factors plus the estimated regional out-migration of population suggests that construction during this period can be considered a minimum level of activity for projection purposes. More favorable economic conditions or a shift in population patterns would result in a much higher level of new construction.

TABLE 2

HOUSING UNITS AUTHORIZED BY BUILDING PERMITS
UTICA-ROME AIR QUALITY MAINTENANCE AREA

		1970	1971	1972	1973	1974	Total		Percent of AQMA	Adjusted Allocation
Frankfort	Town	21	18	18	25	20	102)		2.8	180
	Village		-	2	2	-	4)	106		
Schuyler		-	16	9	20	-	45		1.2	91
Deerfield		-	-	12	-	-	12		0.3	10
Floyd		-	-	-	-	-	-			17
Kirkland	Town	16	19	18	65	23	157)		4.4	45
Clinton	Village	1	2	3	4	1	11)	168		
Lee		-	-	-	-	-	-			81
Marcy		14	28	7	-	13	62		1.6	70
New Hartford	Town	-	205	65	54	41	365)			
	Village	3	1	1	-	1	6)	499	13.2	483
NY Mills	Village	28	14	5	65	16	128)			
Paris		-	-	-	-	-	-			17
Rome City		546	161	343	144	252	1,446		38.2	1,186
Trenton	Town									
Holland Patent	Village	2	2	2	-	-	6		0.1	84
Utica City		486	383	151	69	163	1,252		33.1	980
Westmoreland		22	23	30	30	22	127		3.4	116
Whitestown -	Oriskany	2	9	11	10	7	39)			
	Whitesboro	2	4	10	2	-	18)	64	1.7	185
	Yorkville	2	2	-	1	2	7)			
TOTAL		1,145	887	687	491	561	3,787		100.0	3,545
Percent of SMSA		71.1	80.2	79.1	64.7	69.3	73.5			
SMSA Estimate		1,610	1,106	868	759	810	5,153			

TABLE 3

PROJECTED HOUSEHOLDS, UTICA-ROME SMSA, 1970-2000

Year	County		SMSA	
	Herkimer	Oneida	Total	Change
1970	21,406	82,080	103,486	-
1975	22,523	86,051	108,574	5,088
1980	23,447	90,105	113,552	4,978
1985	24,321	94,431	118,752	5,200
1990	25,064	97,677	122,761	4,009
1995	25,384	99,328	124,712	1,951
2000	25,600	100,667	126,267	1,555

NYS Economic Development Board, 1976 (preliminary)

TABLE 4

PROJECTED POPULATION & HOUSEHOLDS, HERKIMER & ONEIDA COUNTIES

Herkimer	Population	Persons/HH	Households	Percent Change
Census 1970	67,633	3.12	21,406	
75	68,187*	2.97**	22,959***	7.3
80	67,715	2.86	23,677	3.1
85	67,300	2.73	24,652	4.1
90	66,832	2.60	25,704	4.3
95	66,101	2.55****	25,922	0.8
2000	65,362	2.50****	26,145	0.9

Oneida	Population	Persons/HH	Households	Percent Change
Census 1970	273,037	3.16	82,080	
75	269,319*	2.97	90,680***	3.6
80	265,747	2.86**	92,919	2.5
85	264,324	2.73	96,822	4.2
90	264,238	2.60	101,630	5.0
95	261,933	2.55****	102,718	1.1
2000	258,564	2.50****	103,426	0.7

Herkimer-Oneida	Households	New Households
Census 1970	103,486	-
75	113,639	10,153
80	115,596	2,957
85	121,474	4,878
90	127,334	5,860
95	128,640	1,306
2000	129,571	931

*NYS Economic Development Board 1975 Preliminary Projections
**Current Population Reports P-25-607
***Calculated
****Extension of Census Projection

TABLE 5

ESTIMATED HOUSING UNITS 1975 BASED ON CONSTRUCTION ACTIVITY 1970-74

	Total H.U. 1970 1st Count	New H.U.* 1970-74	Est. Total		Est. Loss 1% of 1970	1975
Frankfort	2,486	180	2,666		25	2,641
Schuyler	877	91	968		9	959
Deerfield	1,088	12	1,100		11	1,089
Floyd	1,003	17	1,020		10	1,010
Kirkland	3,437	152	3,589		34	3,555
Lee	1,687	81	1,768		17	1,751
Marcy	1,387	62	1,449		14	1,435
New Hartford	6,553	413	6,966		66	6,900
Paris	1,365	17	1,382		14	1,368
Rome	14,524	1,446	15,970	(count)	545	15,425
Trenton	1,435	84	1,519		14	1,505
Utica	32,797	1,668	34,465	(count)	1,013	33,452
Westmoreland	1,392	127	1,519		14	1,505
Whitestown	6,662	192	6,854		67	6,787
AQMA Total	76,693	4,542	81,235		1,853	79,382
SMSA Total Housing Units	112,712	5,153	117,865		2,214	115,651
Percent of SMSA	68.0					68.6
SMSA Total Households	103,486					113,639***
Total Year Round H.U.	109,306	5,153	114,459		2,180	112,279
AQMA Percent of Year Round Housing Units**	70.2					70.7

Assume Continuation of 1970-74 Level of Construction Activity

*Building Permit + Mobile Home Est.

**Seasonal Dwellings are not a significant number in the AQMA

***Projected, See Table 4

TABLE 6

KILOMETER SQUARES ALTERED BY LAND USE UPDATE & PROJECTION
UTICA-ROME AQMA

Community	LAND AREA IN KILOMETER SQUARES		
	Total (LUNR)	Update To 1975	Projection To 2000
Frankfort	97	3	6
Schuyler	101	4	4
Floyd	91	0	3
Kirkland	85	5	7
Lee	117	6	8
Marcy	86	7	16
New Hartford (T)	64	20	18
Paris	80	0	0
Rome	196	17	19
Trenton	115	2	6
Utica	44	11	10
Westmoreland	113	4	13
Whitestown	68	14	11
TOTAL AQMA	1,252	97	124

TABLE 7

HOUSING DENSITY
LUNR SURVEY IN UTICA-ROME AIR QUALITY MAINTENANCE AREA

The following are Field Counts of Sample Hectares in the Utica Area

U.S.G.S. Quadrangle	LUNR Residential Density		
	RH (High)	RM (Medium)	RL (Low)
UTICA WEST	(14	10	6
	(37	10	4
	(25	11	4
	(36	10	4
	(21	12	5
UTICA EAST	(28		
	(26		
	(35		
	(30		
AVERAGE	28	10.6	4.6
	30	11	5

TABLE 8

URBAN LAND USE CHANGES 1968-1975
UTICA-ROME AIR QUALITY MANAGEMENT AREA

		Area In Hectares		Percent
		1968	1975	Change
RESIDENTIAL				
DENSITY - HIGH	RH	1,444	1,561	8.1
MEDIUM	RM	3,331	3,439	3.3
LOW	RL	2,952	3,042	3.0
STRIP	RS	258	258	0
RURAL HAMLET	RR	513	513	0
ESTATES*	RE	24	24	0
COMMERCIAL				
CBD	CU	178	162	-0.9
SHOPPING CENTER	CC	68	127	86.8
COMMERCIAL STRIP	CS	822	963	17.2
RESORT*	CR	25	25	0
MANUFACTURING				
LIGHT	IL	208	260	25.0
HEAVY	IH	467	455	-2.6
OUTDOOR RECREATION	OR	1,488	1,608	8.1
PUBLIC	P	3,477	3,707	6.6
TOTAL		15,255	16,144	5.9

*This category is not shown in the projection

The Bureau of the Census and the State Economic Development Board both note a trend toward smaller household size which tends to maintain a higher demand for housing units. This trend was reflected in the 1976 Economic Development Board projection of household formation in the region (Table 3).

A separate projection of households results from dividing projected population by household size projected by the Census Bureau (Table 4). Both projections show substantial household formation through 1990 followed by a sharp decline in growth through 2000.

Inspection of both household projections supports the reasonableness of assuming a market of approximately 1,000 new housing units per year. To simplify assumptions of land absorption this is extended to 2000. Naturally, this market estimate would be adjusted upward if future projections indicate population growth in the region.

In order to translate housing construction activity into land use, the residential land uses reported in the LUNR survey were updated with the aid of 1975 aerial photography and the change in residential land use noted on a community basis. This was done by measuring some 97 kilometer squares where changes were known to have taken place. In the course of assigning projected growth this sample was expanded to 124 kilometer squares (Table 6). Hectares in each residential category in each community were translated to housing units on the basis of a sample field check of housing units per hectare in each category. The housing units in each land use category were then restated as percentages of the total estimated housing units. The estimated new housing construction for each community was assigned to residential categories on a basis of the percentage of housing units in each category existing in 1975.

For projection purposes it was assumed that 5,000 housing units would be constructed in the region in each five-year period. The new construction was assigned to communities on the basis of recorded activity in the 1969-74 period. During that period 74% of new construction took place in the 14 core communities which comprise the Utica-Rome Air Quality Management Area. The balance occurred in the Mohawk Valley communities and outlying parts of the SMSA. Permit records for the Air Quality Management Area were adjusted for non-reporting and for the establishment of several large mobile home parks. The adjusted housing construction figures for the years 1970-1974 were used as a basis for estimating land use changes during the projection periods. The total housing units were divided into density categories and these, in turn, were converted to hectares of new residential land. This calculation is presented in Tables 9 and 10.

DISTRIBUTION OF NEW RESIDENTIAL LAND

The calculation of residential land increase by town was further assigned to locations within the towns on the basis of the land use goals, objectives and policies.

Assignments were made to areas with soil suitable to residential construction with priority being given to those locations presently served or accessible to public water and sewer facilities. The assignments reflect the existing pattern of residential density and the proposals contained in the local master plans. Following these considerations, probable conversion of land from an open land use category to residential was indicated on a LUNR map overlay with a one kilometer grid. Land use changes in each kilometer square were coded for inclusion in the Air Quality model for Utica-Rome.

TABLE 9

DISTRIBUTION OF HOUSING UNITS AMONG RESIDENTIAL LAND USE CLASSES, 1975
UTICA-ROME AIR QUALITY MAINTENANCE AREA

	1975 LUNR Update (Preliminary) Hectares					Estimated Housing Units * Units per Hectare					Percent of Est. Housing Units			
	RH	RM	RL	RS	Mobile Homes MH	RH 30	RM 11	RL 5	RS 2	Total Est. 1975 HU From Land Area	RH	RM	RL	RS
Frankfort	10	75	261	7	150	300	825	1,305	14	2,444	12.3	33.8	53.4	0.5
Schuyler	25	20	74	2	375	750	220	370	4	1,344	55.8	16.4	27.5	0.3
Deerfield	1	195	142	12	-	30	2,145	710	29	2,909	1.0	73.7	24.4	0.9
Floyd	17	22	245	6	-	510	242	1,225	12	1,989	25.6	12.2	61.6	0.6
Kirkland	14	255	192	1	-	420	2,805	960	2	4,187	1.5**	6.0**	2.0**	5.0**
Lee	9	125	114	11	-	270	1,375	570	22	2,237	12.1	61.4	25.5	1.0
Marcy	8	67	379	29	-	240	737	1,895	58	2,930	8.2	25.2	64.7	1.9
New Hartford	71	687	514	28	-	2,130	7,557	2,570	56	12,313	17.3	61.4	20.9	0.4
Paris	10	46	108	14	-	300	506	540	28	1,374	21.8	36.8	39.3	2.1
Rome	406	663	282	70	-	12,180	7,293	1,410	140	21,023	58.0	34.7	6.7	0.6
Trenton	15	0	205	34	-	450	0	1,025	68	1,543	29.2	0	66.4	4.4
Utica	872	707	115	8	-	26,160	7,777	575	16	34,528	75.7	22.6	1.7	0
Westmoreland	1	4	185	20	-	30	44	925	40	1,039	2.9	4.2	89.0	3.9
Whitestown	71	529	206	16	-	2,130	5,819	1,030	32	9,011	2.9	64.6	11.4	0.4
Total Air Quality Maintenance Area	1,530	3,395	3,022	258		45,900	37,345	15,110	516	98,871	46.4	37.8	15.3	0.5

*Based on Field Check of Smaple Hectares (Table 7)
**Assumption used in calculating growth assignment

TABLE 10

HECTARES OF NEW RESIDENTIAL LAND NEEDED PER FIVE YEAR PERIOD
UTICA-ROME AQMA

	Housing Units								
	Projected New Construction Five Years	Assignment to Land Use Classes (Distribution from Table 9)				Conversion to Hectares of Land			
		RH	RM	RL	RS	RH	RM	RL	RS
Frankfort	180	22	61	96	1	1	6	19	1
Schuyler	91	51	15	25	0	2	1	5	1
Deerfield	10	1	7	2	1	0	1	0	1
Floyd	17	4	2	10	1	0	0	2	1
Kirkland	45	7	27	9	2	2	3	2	1
Lee	81	10	50	20	1	0	5	4	1
Marcy	70	6	18	45	1	0	2	9	1
New Hartford	483	84	297	100	2	3	27	20	1
Paris	17	4	6	7	0	0	1	1	1
Rome	1,186	688	411	79	8	23	37	16	4
Trenton	84	24	0	56	4	1	0	11	2
Utica	980	742	221	17	0	25	20	3	1
Westmoreland	116	3	5	103	5	0	0	21	2
Whitestown	185	44	120	21	0	1	11	4	1
Total Air Quality Maintenance Area	3,545	1,690	1,240	590	26	58	114	117	19

COMMERCIAL AND INDUSTRIAL LAND NEEDS

Projecting commercial and industrial land needs is a difficult problem in the face of a projected decline in regional population. In addition to the problem of a depressed economy, there is the matter of under-utilization of existing commercial and industrial facilities. Alternate methods for projecting commercial and industrial land needs include extrapolation of past trends, use of a ratio of commercial and industrial land to total urban land, and a ratio of commercial and industrial land to population.

Past Trends

Projecting past trends of land consumption for commercial/industrial purposes is perhaps the most traditional land use forecasting technique. Its mechanics are quite simple: a table showing the number of acres developed as commercial or industrial is prepared, the figures are then aggregated to show total new acres developed by year or by some other block of time, then future projections are made by adding the number of acres developed per year multiplied by the number of years in the forecast period.

The primary advantages to this method are its simplicity and the reliability of the data base. Its major drawback is that the projections derived from it are accurate only insofar as the future reflects past trends. In the case of the Utica-Rome SMSA there is an additional drawback in that the past trends themselves are conflicting.

In recent years the region has experienced a fair amount of non-residential site preparation and construction. Significant public investments have been made in developing fully serviced sites* for non-residential use. Existing industrial parks have been expanded and new ones created through the offices of the Herkimer and Oneida County Governments, the Oneida County Industrial Development Corporation and the Herkimer County Area Development Corporation. The staff of the Herkimer-Oneida Counties Comprehensive Planning Program has assisted the two area industrial development organizations in identifying and analyzing potential non-residential sites for inclusion in the region's portfolio of marketable non-residential locations. In commercial development the year 1975 alone experienced the opening of the 200,000 square foot Riverside Mall. If the trends established by these activities were projected into the future then the requirements for non-residential land would be substantial.

On the other hand, unemployment statistics from the New York State Department of Labor** show that the SMSA unemployment rate has risen from 5.5% in 1970 to 10.5% in 1975. Just in the month of December, 1975, the region lost in excess of 2,000

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*Fully serviced sites, as used in this report, refers to either specific parcels or larger industrial park areas where public water & sewer services are available.

**See Table 13 on page 23

jobs due to plant closings and lay-offs. The large gain in commercial land was offset by the closing of three large shopping centers, mostly due to the new competition from the Riverside Mall, and at present there are no prospective retail tenants for this vacant space. Clearly, then, a straight line projection of past trends in non-residential land development would be misleading if applied to the Utica-Rome SMSA.

Ratio Formula

Another traditional method of forecasting future non-residential land use requirements is to utilize a ratio based on some larger geographic area. In this methodology a larger area for which existing and future land use statistics have been prepared is chosen. The amount of land which has been developed for non-residential purposes is then calculated for the study area and for the larger area. Development within the study area is then expressed as a percent of land development in the larger area. Future land use requirements for the study area are then calculated by applying that percentage to the future projected land use requirements in the larger area.

There are two drawbacks to using this methodology for the Utica-Rome SMSA. The first is the unavailability of land use statistics. The only state-wide inventory of land use is the LUNR Survey which was completed in 1968. Various planning agencies representing different areas of the state have prepared their own surveys or updated the LUNR study, but the years in which the updates were completed do not correspond among the regions. The HOCCPP, for instance, completed its own land use survey in 1965 predating the LUNR inventory. Further the regional land use surveys which do exist used different criteria in classifying land use. As a result there are no two years of compatable data available from which to derive the Herkimer-Oneida region's share of non-residential development.

The other drawback is that, to be meaningful, there must be a relationship between development in the study area and in the larger region. Projecting a study area development pace as part of a larger region's can only be successful if both areas are responding to similar stimuli. If they are not, then a gain or loss in land use in the larger region will not lead to a similar gain nor loss in the study area where the economic activities studied might represent an insignificant use of land.

The Herkimer-Oneida region is not logically part of any larger region unless the scale is increased to include all of Upstate New York. The SMSA is physically isolated and its employment base is in the service and ancillary production categories. Although market forces in terms of state-wide employment trends are reflected here, land use forces including development pace are not. Further, the region's employment base is traditionally the first to feel a recession and the last to recover. A ratio formula, then is not appropriate for forecasting future commercial/industrial development in this region.

Population

Population projections have frequently been used to project non-residential land requirements. Generally such projections either compare land use surveys with contemporary population data or utilize existing standards for non-residential land requirements in acres necessary to support certain populations. The relationships between industrial and commercial land use and population are then forecasted at future population levels.

There are two weak links in these methodologies. First, their accuracy is dependent of the accuracy of the population projections. Also, there is a tacet assumption that population and the number of acres devoted to non-residential uses will be related in some fashion or other, and that this relationship will be static or at least susceptable to statistical analysis so that a projection equation may be drawn.

The Herkimer-Oneida Counties Comprehensive Planning Program prepared a set of population projections in 1972. Prior to their publication in the report Population (HOCCPP, 1972) the NYS Office of Planning Services released a set of population projections for the whole state and its civil divisions. State policy dictated that the HOCCPP alter its report to use the Office of Planning Services projections even though they differed significantly from the ones prepared by HOCCPP. In November 1975 the NYS Economic Development Board released a new set of population projections. These were significantly different from the 1972 projections and, in fact, called for a steady decline in the Utica-Rome SMSA's population through the year 2000. Given these changing population projections it is difficult to justify a land use projection based on them.

The second weak link is the assumption that gross population, or population by age group, is related in some measurable manner to non-residential land use. Given the changing characteristics of the region's population (shifts in age groupings, changes in number of households and household size) and the changing nature of the workforce (the entrance of a number of spouses, the present emphasis on "work-study" programs by local colleges) it appears that any such relationship drawn today would be very exposed to a future change in this area thus rendering the projections invalid.

Labor Force

The methodology finally selected was to correlate future land use requirements with projections of the labor force. It was felt that sufficient data existed to project the labor force at differing population levels and that, by assuming arbitrary levels of unemployment, realistic figures for future employment levels could be derived. Employment, in turn, could be converted into future land use requirements on the assumption that, even though the size and composition of the work

force may change over time, the design and construction of commercial and industrial buildings would not change appreciably and their employment/acre relationship would remain valid throughout the forecast period.

CORRELATION OF EMPLOYMENT AND LAND USE METHODOLOGY

Overview

The following section contains a step by step description of this methodology and traces the land use projections as they were developed. The results were verified at two places during the process so that accuracy could be evaluated. The verification procedures are also explained.

Labor Force Projections

Table 11 contains the projections of labor force through the year 2000. It was derived by calculating the 1960 and 1970 labor force as a percent of total regional population. This was seen to increase by 3.41% during the 10-year interval. It was assumed for planning purposes that this change would remain static throughout the forecast period primarily because it contains an allowance for labor force increases due to changing family size and families with working spouses. As with all projections its reliability becomes more suspect as the time period lengthens.

TABLE 11

POPULATION AND LABOR FORCE 1960-2000

UTICA-ROME SMSA

Year	Population	% of Population	Labor Force*
1960	330,771	36.27	119,987
1970	340,670	39.68	135,172
1975	337,506	41.385	139,678
1980	333,462	43.09	143,689
1985	331,624	44.795	148,551
1990	331,070	46.5	153,948
1995	328,034	48.205	158,129
2000	323,926	49.91	161,671

*1960 and 1970 from U.S. Census; 14 and 15 year old cohorts subtracted from 1960; 1975-2000 straight line projection

Labor Force Projections - Verification

In the absence of projections for future labor force prepared by an outside agency, these projections had to be verified by inference rather than by comparison. To do this the NYS Economic Development Board's population projections were broken down into two groups: total population and population aged 20-64. This 20-64 age group generally corresponds with the labor force age groups. Table 12 lists these figures and calculates the 20-64 age group as a percent of total population. It was felt that if this group increased as a percent of total population even though the total population was decreasing, then the prior assumption that the labor force itself was increasing as a percent of population would be verified. Table 11 shows that there is an increasing pattern even though this does not hold true for 1990 and 1995. For planning purposes the prior assumption was verified.

Employment Projections

Table 13 converts the future labor force figures into future employment. This was done by applying the appropriate unemployment rate to the total labor force. The figures for unemployment during 1970-1975 were supplied by the NYS Department of Labor. Although not totally consistent they do indicate a high level of unemployment peaking in 1975 at 10.5%. Future unemployment rates were calculated by assuming a drop in unemployment of 1% every five years. This long-term gradual reduction in unemployment is consistent with the long-term employment outlook for the Utica-Rome SMSA.

TABLE 12

LABOR FORCE AS A PERCENT OF POPULATION VERIFICATION

UTICA-ROME SMSA

Year	Total Population	Population Aged 20-64	Percent
1970	340,670	174,421	51.20
1975	337,506	182,466	54.06
1980	333,462	187,820	56.32
1985	331,624	190,543	57.46
1990	331,070	189,204	57.15
1995	328,034	186,771	56.99
2000	323,926	188,322	58.14

Verified for planning purposes because it shows a continuing increase in the labor force population age groups as a percent of total population.

TABLE 13

LABOR FORCE AND EMPLOYMENT 1970-2000

UTICA-ROME SMSA

Year	Labor Force	Unemployment Rate	Employment
1970*	125,796	5.5%	118,871
(1970)**	(135,172)	(5.53%)	(127,696)
1971*	127,260	9.2%	115,513
1972	128,734	10.4%	115,302
1973	122,767	6.3%	115,017
1974	127,200	6.7%	117,978
1975	129,220	10.5%	115,703
1980	133,717	9.5%	121,014
1985	138,242	8.5%	126,491
1990	143,264	7.5%	132,519
1995	147,155	6.5%	137,590
2000	150,451	5.5%	142,176

*1970-1975 NYS Department of Labor
**U.S. Census

The future employment levels shown have the advantage of being derived from a flexible system. As the future becomes the past and actual unemployment figures are published for future years, the unemployment projections in the report may be modified using this same methodology. In this manner any false assumptions contained in this report may easily be corrected.

Employment Projections - Verification

The employment projections were verified by running comparisons with two independently prepared sets of employment projections. In each case future employment was calcualted as a percent of future population. It was felt that verification from two outside sources was necessary because, even through a number of projections of this sort have been made, each projection has been derived from a different data base. The population figures in particular are different in each data base. Also, the reliability of the future employment figure is extremely important because it was used as the final basis for the land use projections. Any error in future employment, including any error in the assumed future unemployment rate, would render the land use projections invalid.

The verification process is shown in Table 14. For each set of data the projected SMSA employment figure was divided by the future population and expressed as a percent. The first set of data is the figures contained in this report. Columns (2), (3) and (4) are the population projections prepared in 1975 by the NYS Economic Development Board, the employment projections from Table 13 of this report, and the percent of total population represented by employment.

The second set of data was abstracted from Table 1 of the 1972-E OBERS Projections, Economic Activuty in the U.S., Volume 5, Standard Metropolitan Statistical Areas published in April 1974 as a joint project of the U.S. Departments of Commerce and Agriculture. This set is presented in columns (5), (6) and (7).

The final set of data used two sources. The 1980 employment projection came from MANPOWER REQUIREMENTS: Interim Projections, New York State 1968-1980 published by the NYS Department of Labor. 1980 was the last projection year in the report. This report in turn was based on the 1972 preliminary population projections which at that time were being prepared by the NYS Office of Planning Services. Column 8, therefore, is the 1980 population projection according to the NYS OPS (1972 version) and column 9 is from the NYS DOL.

The coarse figures without decimal places show the long-term correlation with the U.S. Departments of Commerce and Agriculture figures and therefore verify the long-term employment trend. More exact percentages are included for 1980 because this was the only projection year for which three figures could be derived and compared. It was felt that their differences were insignificant and that the employment projections were verified.

TABLE 14

EMPLOYMENT TO POPULATION RATIO VERIFICATION

Year	Source: HOCCPP			Source: OBERS			Source: NYS DOL & OPS		
	Pop	Emp	Emp - Pop	Pop	Emp	Emp - Pop	Pop	Emp	Emp - Pop
1970	340,670	118,871	34.9%	341,019	128,609	38%			
1980	333,462	121,014	36.3%	343,200	145,100	42.279%	352,668	135,400	38.393%
1985	331,620	126,491	38.1%	347,200	147,600	42%			
1990	331,070	132,519	40.0%	351,100	150,200	43%			
2000	323,926	142,176	43.9%	355,900	158,400	45%			

Employment by Category

In order to arrive at separate figures for future land needed for commercial versus industrial uses based on employment, the employment figures themselves had to be divided into categories. For the purposes of this report only three categories were used. The first was military, primarily armed forces personnel and government service employees working at Griffiss Air Force Base. The second category was industrial. This included only the Manufacturing and Durable Goods categories from the U.S. Census. The last category included everything else. It is important to realize this when using these land use projections. Commercial, office, sales, service and numerous other types of workers are included so the figures under the heading "Commercial and Service" apply to a great deal more than just offices and stores.

Table 15 presents the data on employment by category. The relative shift toward Commercial and Service employment and away from Industrial is seen not only in the two census years, it is also reflected in the region's current planning for employment growth. The two types of employment which are expected to make the most dramatic gains in the near future are service industries and tourism. The overall shift from Industrial to Commercial and Service is not dramatic even though it is a continuing trend. Throughout the twenty-five year forecast period the percent of all employed workers in the Commercial and Service classification rises only 4.47%.

Military employment has been held at a constant figure of 8,000. The implications of any great disruption in Griffiss employment (either upward or downward) are too great to be addressed in this report. Military employment does change as a percent of total employment even though the number of Military employees is static. This is because the total number of employed persons changes from year to year. As the base figure for total employment shifts, the percent of that base represented by 8,000 Military and Government Service Employee workers will change.

LAND USE PROJECTIONS

The preceeding sections of this report have developed a methodology for establishing future employment in three large categories. The methodology is based on readily available data and, should any significant changes in the region's economic situation occur, the resulting new data may be inserted into the methodology with minimal disruption to the process. This should be done periodically to insure the projections' accuracy and also to keep the projections current.

Commercial and Service Land Use Projections

Projecting land use requirements on the basis of employment requires a computation of the relationship between that land use and the number of people it employs.

TABLE 15

EMPLOYMENT BY CATEGORY 1960-2000

Year (1)	Total Employed (2)	Military Number (3)	Military Percent	Remainder (4)	Industrial Number (5)	Industrial % of 4	Commercial/Service Number (6)	Commercial/Service % of 4
1960	120,650	8,000	6.63	112,650	45,033	39.98	67,617	60.02
1970	118,871	8,000	6.73	110,871	42,342	38.19	68,529	61.81
1975	115,703	8,000	6.91	107,703	40,162	37.29	67,541	62.17
1980	121,014	8,000	6.61	113,014	41,137	36.40	71,877	63.60
1985	126,491	8,000	6.32	118,491	42,064	35.50	76,427	64.50
1990	132,519	8,000	6.03	124,519	43,096	34.61	81,423	65.39
1995	137,590	8,000	5.81	129,590	43,685	33.71	85,905	66.29
2000	142,176	8,000	5.63	134,176	44,037	32.82	90,139	67.18

Historically Commercial and Service employment in the Utica-Rome SMSA has employed fewer people per acre of land use than has industrial employment. This is primarily due to the compact, multi-story configuration of many of the region's industrial buildings. Current trends toward single-story industrial plants occupying larger land areas than their multi-story counterparts will gradually decrease this descrepency.

Commercial and Service employment in Herkimer-Oneida Counties has been calculated at 14.41 jobs per acre. In other words, the land area occupied by Commercial and Service uses is equal to total Commercial and Service employees divided by 14.41. Table 16 lists future land use requirements based on this standard. Column (2) contains the figures developed in Table 15 while column (3) is employment divided by 14.41.

Column (4), New Land Use, is a comparison between forecast years. It should be noted that New Land Requirements in Acres for 1975 is 0. Because a mathematical formula was used to convert employees to land use in acres, and because the number of employees dropped between the base year and 1975, the formula automatically registered a decrease in Commercial and Service land requirements in 1975. Obviously this does not mean that the buildings occupying this surplus land were demolished, but some of them were vacated such as the W.T. Grant stores and Westons. In the region's urban centers in particular, the upper floors of office and commercial buildings are no longer occupied even though there are still stores on the ground floors. Also, many Commercial and Service employers have reduced their employees without reducing their work space. Because of the substantial potential for increasing employment within land areas already in commercial use, a limited amount of the new space was assigned to new, undeveloped land. As employment begins to rise in the future the initial surge will see employees being rehired back into existing stores and offices and the reopening of some of the region's vacant Commercial and Service buildings. New construction will also take place but it will only house a portion of the increasing number of employed persons.

Column (4), New Land Use, is a cumulative total. The projections, therefore, call for the reopening of presently unoccupied Commercial and Service space plus the development of new space, some of which will be in urban renewal areas, some in existing commercial areas and some on open land. If this was all on open land, it would absorb 301 acres by 1980. Identification of new commercial areas on the map is limited to showing extension of existing centers. No new centers are shown.

Industrial Land Use Projections

Table 17, Future Industrial Land Use Requirements, was prepared in the same manner as Table 16. Once again the descrepency between employment during the base

TABLE 16

FUTURE COMMERCIAL/SERVICE LAND USE REQUIREMENTS

Year (1)	Employment (2)	Land Required** Acres (3)	Land Required** Hectares	New Land Use Acres (4)	New Land Use Hectares
Base Year*	68,529	4,755	1,925	-	-
1975	67,541	4,686	1,897	0****	0
1980	71,877	4,987	2,019	301	122
1985	76,427	5,303	2,147	617	250
1990	81,423	5,650	2,287	964	390
1995	85,905	5,961	2,413	1,275	516
2000	90,139	6,255	2,532	1,569	635

*1968 LUNR and 1970 Census
**@ 14.41 jobs/acre
***Cumulative Totals
****See explanation in preceeding section

TABLE 17

FUTURE INDUSTRIAL LAND USE REQUIREMENTS

Year (1)	Employment (2)	Land Required** Acres (3)	Land Required** Hectares	New Land Use*** Acres (4)	New Land Use*** Hectares
Base Year*	42,3[illegible]	2,086	845	-	-
1975	40,162	1,978	801	0****	-
1980	41,137	2,026	820	48*****	19
1985	42,064	2,072	839	94	38
1990	43,096	2,123	860	145	59
1995	43,685	2,152	871	174	70
2000	44,037	2,169	878	181	77

*1968 LUNR and 1970 Census
**@ 20.30 jobs/acre
***Cumulative Totals
****See Explanation in Narrative
*****Explained in Narrative; 1980 = 1/3 of surplus; 1985 on = cumulative total

year and 1975 indicates a surplus of industrial land in 1975. Most of this is due to the drop in employment, i.e. plant closings, layoffs and elimination of midnight shifts and, while industrial land supply currently exceeds useage, the long-term gain in employment will see plant reopenings and call-backs.

Column (4), New Land Use, has been calculated differently than it was in Table 16. Here it was not assumed that most of the existing unoccupied industrial space would be occupied in the future. As mentioned previously much of the region's industrial space is in older buildings which are inappropriate to current industrial construction standards and processes. Some of these older buildings have already been converted from true industry to warehousing, wholesaling and education uses. It is expected that more of this conversion will occur in the future and that some of this vacant industrial space will never be reoccupied by industry. Therefore the figure in column (4) for 1980 is plus 48 acres even though 1980 employment is below base year employment. The figure 48 represents one-third of the new land use demand between 1975 and 1980. In other words two-thirds of the increase in employment between 1975 and 1980 would be workers returning to existing structures, the last third represents new construction. From 1980 to 2000 it was assumed that all new employment would occupy new industrial space. Almost all of this new construction is expected to take place in the region's industrial parks because they have been planned and zoned for industrial use, are being actively marketed, and the utility services required by industry are either on the sites already or located in close proximity to them.

ANALYSIS AND IMPLICATIONS

The results of these analyses show a continuing modest growth in the region's non-residential land uses. They indicate that rising employment in the short-term will not result in comparable increases in land useage. As previously explained, this is because of the region's existing supply of unoccupied and underoccupied non-residential structures. The relationship between employment and non-residential development will become more consistent in the long-term as existing buildings approach full utilization and obsolete buildings are either converted to other uses or phased out completely.

Land development in the Commercial and Service category is expected to overshadow industrial land development. Clearly this is a reflection of the shift in the region's economy from industrial to service and tourism employment which is currently taking place, and which is expected to continue.

TABLE 18

PROJECTED TOTAL URBAN LAND, 1975-2000, UTICA-ROME AIR QUALITY MAINTENANCE AREA

	TOTAL LAND	URBAN LAND (HECTARES)					PERCENT URBAN				
		1975	1980	1985	1995	2000	1975	1980	1985	1995	2000
Frankfort	9,700	629	694	744	814	847	6.48	7.15	7.67	8.39	8.73
Schuyler	10,100	217	221	235	252	265	2.15	2.19	2.33	2.50	2.62
Deerfield	8,500	504	505	510	511	513	5.93	5.94	6.00	6.01	6.04
Floyd	9,100	403	407	409	417	420	4.43	4.47	4.49	4.58	4.62
Kirkland	8,500	742	746	750	774	785	8.73	8.78	8.82	9.11	9.24
Lee	11,700	531	542	572	603	624	4.54	4.63	4.89	5.15	5.33
Marcy	8,600	919	940	953	986	1,003	10.69	10.93	11.08	11.47	11.66
New Hartford	6,400	1,894	1,908	1,951	2,014	2,106	29.59	29.81	30.48	31.47	32.91
Paris	8,000	371	371	371	371	371	4.64	4.64	4.64	4.64	4.64
Rome	19,600	4,379	4,445	4,520	4,666	4,838	22.34	22.68	23.06	23.81	24.68
Trenton	11,500	463	477	492	518	530	4.03	4.15	4.28	4.50	4.61
Utica	4,400	3,056	3,090	3,110	3,135	3,136	69.45	70.23	70.68	71.25	71.27
Westmoreland	11,300	442	467	497	550	571	3.91	4.13	4.40	4.87	5.05
Whitestown	6,800	1,511	1,540	1,573	1,683	1,689	22.22	22.65	23.13	24.75	24.84
Utica-Rome AQMA	134,200	16,061	16,353	16,687	17,294	17,698	11.97	12.19	12.43	12.89	13.19

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TABLE 19 PROJECTED URBAN LAND USES, 1975-2000, UTICA ROME AIR QUALITY MAINTENANCE AREA

AREA IN HECTARES

TOWN/CITY	YEAR	RESIDENTIAL (DENSITY) HIGH	MEDIUM	LOW	STRIP	RURAL HAMLET	CBD	SHOPPING CENTER	COMMERCIAL STRIP	INDUSTRIAL LIGHT	HEAVY	OUTDOOR RECREATION	PUBLIC	TOTAL URBAN LAND
HERKIMER COUNTY														
FRANKFORT	1975	10	75	261	7	27	11	0	56	16	38	107	59	629
	1980	10	79	280	7	27	11	0	56	20	38	107	59	694
	1985	10	87	304	10	27	11	4	56	31	38	107	59	744
	1995	10	97	345	14	27	11	4	56	46	38	107	59	814
	2000	10	104	368	17	27	11	4	56	46	38	107	59	847
SCHUYLER	1975	25	20	78	2	0	4	0	50	3	0	13	22	217
	1980	25	20	81	2	0	4	0	51	3	0	13	22	221
	1985	25	23	83	6	0	4	0	51	3	0	18	22	235
	1995	29	23	96	6	0	4	0	51	3	0	18	22	252
	2000	36	23	102	6	0	4	0	51	3	0	18	22	265
ONEIDA COUNTY														
DEERFIELD	1975	1	211	142	12	7	0	5	21	0	0	37	68	504
	1980	1	212	142	12	7	0	5	21	0	0	37	68	505
	1985	1	214	145	12	7	0	5	21	0	0	37	68	510
	1995	1	215	145	12	7	0	5	21	0	0	37	68	511
	2000	1	217	145	12	7	0	5	21	0	0	37	68	513
FLOYD	1975	17	22	245	6	21	0	0	5	0	0	43	44	403
	1980	17	22	249	6	21	0	0	5	0	0	43	44	407
	1985	17	22	251	6	21	0	0	5	0	0	43	44	409
	1995	17	22	259	6	21	0	0	5	0	0	43	44	417
	2000	17	22	262	6	21	0	0	5	0	0	43	44	420
KIRKLAND	1975	14	255	192	1	37	12	0	49	2	0	51	129	742
	1980	14	257	194	1	37	12	0	49	2	0	51	129	746
	1985	14	259	196	1	37	12	0	49	2	0	51	128	750
	1995	14	264	211	5	37	12	0	49	2	0	51	128	774
	2000	14	264	223	5	37	12	0	49	2	0	51	128	785
ONEIDA COUNTY														
LEE	1975	23	126	114	11	66	0	0	32	7	0	59	93	531
	1980	23	132	119	11	66	0	0	32	7	0	59	93	542
	1985	26	145	131	11	66	0	0	34	7	0	59	93	572
	1995	26	163	140	13	66	0	0	36	7	0	59	93	603
	2000	26	169	154	13	66	0	0	37	7	0	59	93	624
MARCY	1975	8	75	379	29	14	0	0	75	1	34	127	177	919
	1980	8	81	387	30	14	0	0	75	1	34	127	183	940
	1985	8	83	397	31	14	0	0	75	11	34	127	183	953
	1995	8	83	416	31	14	0	0	75	21	34	127	191	986
	2000	8	83	427	31	14	0	0	75	27	34	127	191	1003
NEW HARTFORD	1975	78	687	525	28	0	21	38	122	8	51	231	105	1894
	1980	84	690	532	28	0	21	38	122	8	51	229	105	1908
	1985	88	713	552	28	0	21	38	122	8	51	225	105	1951
	1995	94	758	580	28	0	21	38	120	8	51	205	111	2014
	2000	97	804	626	28	0	21	38	120	8	51	202	111	2106
PARIS	1975	10	46	108	14	39	2	0	33	0	8	72	39	371
	1980	10	46	108	14	39	2	0	33	0	8	72	39	371
	1985	10	46	108	14	39	2	0	33	0	8	72	39	371
	1995	10	46	108	14	39	2	0	33	0	8	72	39	371
	2000	10	46	108	14	39	2	0	33	0	8	72	39	371
ROME	1975	416	666	282	70	103	32	15	153	41	150	305	2146	4379
	1980	431	678	300	74	103	32	15	157	54	150	305	2146	4445
	1985	455	713	308	78	103	32	15	152	63	150	305	2146	4520
	1995	484	786	343	84	103	32	15	155	63	150	305	2146	4666
	2000	526	910	349	84	103	32	15	155	63	150	305	2146	4838
TRENTON	1975	15	0	205	34	104	0	0	32	4	0	7	58	463
	1980	16	0	218	34	104	0	0	32	4	0	7	58	477
	1985	17	0	232	34	104	0	0	32	4	0	7	58	492
	1995	18	0	257	34	104	0	0	32	4	0	7	58	518
	2000	19	0	268	34	104	0	0	32	4	0	7	58	530
ONEIDA COUNTY														
UTICA	1975	872	717	120	8	0	75	54	189	116	144	238	523	3056
	1980	883	739	121	8	0	75	54	189	116	144	238	523	3090
	1985	904	747	124	8	0	75	54	189	116	144	238	511	3110
	1995	914	769	127	8	0	75	54	189	116	144	238	501	3135
	2000	914	770	127	8	0	75	54	189	116	144	238	501	3136
WESTMORELAND	1975	1	10	185	20	80	0	0	19	0	0	84	43	442
	1980	1	17	201	22	80	0	0	19	0	0	84	43	467
	1985	1	21	237	24	80	0	0	23	0	0	84	43	497
	1995	1	25	298	28	80	0	0	27	0	0	84	43	550
	2000	1	25	319	28	80	0	0	27	0	0	84	43	571
WHITESTOWN	1975	71	529	206	16	15	5	15	127	62	30	234	201	1511
	1980	72	539	210	16	15	5	15	127	76	30	234	201	1540
	1985	73	550	218	16	15	5	15	127	89	30	234	201	1573
	1995	72	586	229	16	15	5	15	127	153	30	234	201	1683
	2000	75	595	234	16	15	5	15	127	153	30	223	201	1689

TABLE 20
SELECTED PUBLIC AND SEMI-PUBLIC USES. UTICA-ROME AQMA
1968 and 1975

	Schools P-1		Churches P-2		Hospitals P-3	Military P-4	Prison P-11	County Home P-15
	'68	'75	'68	'75				
FRANKFORT	4	3	3		1	0	0	0
SCHUYLER	1	0	4	4	0	0	0	0
DEERFIELD	1	0	2	2	1	0	0	0
FLOYD	1	1	3	3	0	1	0	0
KIRKLAND	4	7	9	9	1	0	0	0
LEE	3	2	7	7	0	0	0	0
MARCY	3	2	4	3	1	0	0	0
NEW HARTFORD	8	9	10	10	3	1	0	0
PARIS	3	2	7	7	0	0	0	0
ROME	18	20	12	26	3	4	0	1(2
TRENTON	4	4	8	8	0	0	0	0
UTICA	21	34	19	77	5	1	0	0
WESTMORELAND	2	2	6	6	0	0	0	0
WHITESTOWN	6	6	8	8	0	0	0(1	0

SOURCES: 1968 LUNR Point Data and 1975 Directory
1) Oneida County Jail Incorrectly omitted in 1968
2) Oneida County Home closed. Buildings house County offices and Mohawk Valley Community College Rome Branch

TABLE 21 PUBLIC SCHOOLS IN THE UTICA-ROME AIR QUALITY MAINTENANCE AREA, 1976

System	UTM Coordinates	School	Grades Served	Original Structure Built	Additions Built	Number of Classrooms	Site Size (acres)	Enrollment Capacity
Chadwicks	479 763	Chadwicks	K-12	1914	'29,'62,'63	25	15	425
Clinton	469 770	Clark Mills	K-6	1935	1964	15	7	480
	468 766	Clinton	K-1, 4-6	1956		27	10	850
	469 766	Clinton	7-9	1932	1950	36	22	600
	468 766	Clinton	10-12	1964		29		600
Frankfort	484 763	Frankfort-Schuyler	9-12	1927	1936	22	22 34	600
	494 763	Reese Road	K-6	1956		22	12	616
	494 764	North Side	7-8	1929		9	.7	315
	486 769	W. Frankfort	K-6	1962		21	23	588
Holland Patent	485 788	Barneveld	K-6	1960		14	20	450
	479 788	Holland Patent	7-9	1937	'52,'54,'59	29	33	750
	479 787	Holland Patent	K-6	1955		18	33	540
	475 785	Stittville	K-6	1960	1967	22	27	690
	479 788	High School	10-12	1970			190	885
New Hartford	473 768	Clinton Road	K-6	1957		24	35	760
	478 767	Higby Road	K-6	1960		24	15	810
	476 768	Oxford Road	K-3,9-12	1932	'52, '57	53	35	1,600
	476 768	Point School	4-6	1901	1921	18	.8	440
	478 767	Westmoreland	7-8	1964		22	25	650
New York Mills	475 771	New York Mills	K-6	1916		22	2	530
	476 770	New York Mills	7-12	1958	1968	30	40	600
Oriskany	472 778	Oriskany	K-6	1961	1964	28	20	750
	472 778	Oriskany	7-12	1931	'50, '53	21	8	400
Rome	463 784	Alter	K-6	1912	1963	19	1	440
	465 795	Bell Road (Clough)	K-6	1934	1963		16	540
	465 783	Bellamy	K-6	1960			18	540
	462 783	Clinton	K-6	1928			1	486
	464 783	Columbus	K-6	1922	1963		1	486
Rome (con't)	463 785	Fort Stanwix	K-6	1920	1963		1	384
	461 785	Canasevoort	K-6	1914	'54, '65		3	513
	462 782	Lake Delta	1-6	1953	'58, '63		14	297
	456 788	Parmalee	K-6	1961	1963		18	540
	464 787	Ridge Mills	K-6	1957	'58, '62		10	540
	463 784	Rome Free Academy	10-12	1926	'58,'62,'63		20	1,944
	464 784	Staley	7-9	1957			49	1,215
	461 784	Stokes	K-6	1957	1960		18	367
	462 786	Strough	K-6, 7-9	1951	'58, '63		14	1,647
	462 789	Turin Road	K-6	1955	'58, '65		16	378
	462 786	Dantl	K-6	1969			10	850
Sauquoit	478 759	Sauquoit Valley	K, 2-5	1923		17	30	459
	479 759	Sauquoit Valley	6-12	1932	1962			621
Utica	482 770	Albany Street	K-6	1896	1959	13	3.9	325
	482 771	Brandegee	K-8	1911	1922	39	3	850
	482 769	Columbus	K-6	1957		16	9.2	400
	481 770	Conkling	K-8	1924		37	2.7	85
	485 773	Herkimer	K-6	1960	1964	18	14	450
	478 769	Hughes	K-8	1925	'53, '53	37	2.9	800
	482 774	Jefferson	K-6	1957		16	9.4	425
	477 768	Jones	K-6	1935	'53, '57	10	4.3	230
	479 770	Kemble Street	K-8	1880	'14, '55	40	1.7	930
	483 773	Kennedy	7-12	1965		30	43	600
	479 772	Kernan	K-8	1916	'53, '55	48	4.3	1,050
	478 772	Lincoln	K-6	1895	1963	9	1.1	225
	483 770	Mary Street	K-5	1901	1958	7	1.8	175
	480 770	Miller	K-6	1955	1958	22	2.3	550
	482 769	Proctor	7-12	1935		71	38.2	1,800
	481 770	Roosevelt	K-8	1893	'09, '29	35	1.5	800
	483 773	Seymour	K-6	1922	'56, '58	26	4.5	700
	477 768	Sunset	K-6	1922	1957	12	.9	300
	483 770	U.F.A.	9-12	1917	'48, '68	124	6.5	2,275
	479 771	Washington	K-6	1892	1959	14	1.5	350
	483 771	Watmore	K-8	1900	'39, '14	21	1.6	300
Whitesboro	482 775	Deerfield	K-6	1964	1964	28	26	726
	474 772	Harts Hill	K-6	1953	1956	25	18	709
	478 775	Marcy	K-6	1958	1957	26	17	748
	476 777	Marcy	10-12	1967		42	40	1,400
	773 476	Parkway	7	1953	1959	22	10	450
	474 774	Westmoreland Road	K-6	1968		28	74	726
	475 774	Whitesboro	K-6	1922	1926	21	2	450
	476 773	Whitesboro	8-9	1936	1954	35	30	900
	477 773	Yorkville	K-4	1922	1954	8	5	227
Westmoreland	487 773	Westmoreland	K-12	1941	'56, '66	69	45	750
BOCES	473 771	Oneida 1	9-12	1975			64	

TABLE 22

LOCATION OF OTHER MAJOR LAND USES IN THE
UTICA-ROME AQMA, 1976

Parochial Schools (P)		UTM COORDINATES
Utica - New Hartford		
Blessed Sacrament	1621 St. Agnes	481 769
Hillel Day School	2310 Oneida	478 769
Holy Trinity	1214 Lincoln	480 771
Notre Dame High School	Burrstone Road	477 771
Our Lady of Lourdes	4 Barton Avenue	477 769
Sacred Heart	Ann & Ney Avenues	478 772
St. Agnes	701 Kossuth	482 771
St. Anthony's	1521 Bleecker	483 771
St. Francis de Sales	301 Genesee	480 771
St. John the Evangelist	Pearl St., New Hartford	476 768
St. Mark's	23 Stanislas, N.Y. Mills	476 772
St. Paul's	11 Parkway Dr, Whitesboro	476 774
St. Peter's	19 Herkimer Road	482 773
Utica Catholic Academy	2527 Genesee	477 769
Rome		
NYS School for the Deaf	401 Turin	462 785
Rome Catholic High School	800 Cypress	463 787
Rome Catholic Junior High	214 W. Liberty	462 784
St. Peter's	400 Floyd Ave.	463 784
Transfiguration	400 S. James	462 783
Frankfort		
St. Mary's	201 Third Ave., Frankfort	494 764

Higher Education (P)	
Hamilton College	466 766
Kirkland College	466 765
Mohawk Valley Community College - Utica	482 769
- Rome	465 785
State University at Utica-Rome	479-772
Munson-Williams-Proctor School of Art	480 771

Mental Hygiene (P)	
Marcy Psychiatric Center	479 779
Utica Psychiatric Center	479 772
Rome Development Center	460 781

Airports (Ta)	
Griffiss Air Force Base	466 786
Oneida County Airport	469 777
Riverside Airport	478 775
Highland Airport	486 762

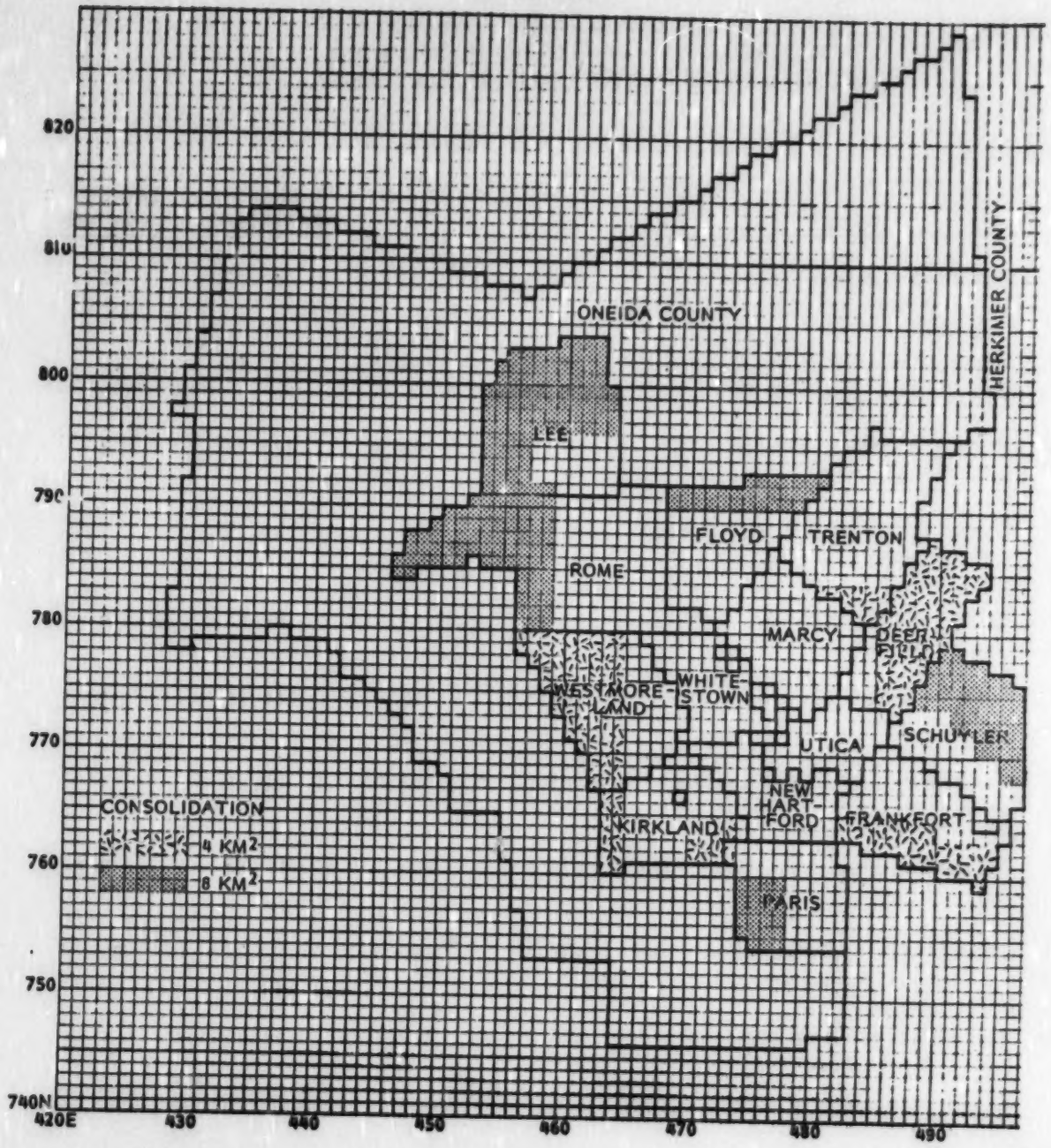
TABLE 23

UTICA-ROME AIR QUALITY MAINTENANCE AREA
POINT SOURCES - PARTICULATE EMISSIONS
(ACTUAL EMISSIONS AT LEAST 25 TONS/YEAR)

	Name	UTM Grid Location E	N	Particulate Emission	Land Area Hectare
1.	Union Fork & Hoe Frankfort	494.5	764.7	31.17	10
2.	Remington Arms Ilion	497.5	762.3	185.16	10
3.	Standard Desk Company Herkimer	501.4	763.4	489.79	3
4.	Caswell Supply Co. Inc. (Feed) Rome	462.7	797.9	25.59	1
5.	Rome Cable Rome	462.0	798.3	82.71	8
6.	Rome Division Revere Rome	464.5	783.8	111.29	38
7.	Rome Manufacturing Co. Div. Rome	465.0	786.0	48.51	3
8.	Aerospace Elec. Sys. Dept. (GE) Utica	476.8	768.3	61.54	4.5
9.	Special Metals Corporation New Hartford	472.1	768.4	51.31	20
10.	Kelsey Hayes Company Whitesboro	476.7	774.3	39.50	9

MINOR CIVIL DIVISION INDEX

UTICA-ROME AQMA AREAS
WHERE KILOMETER SQUARES MAY BE CONSOLIDATED
U.T.M. GRID



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EXAMPLE OF LAND USE CODING SHEET

Card 1	Item		1964	CHANGE	1975
1		494 762	blank		
2-3	County (Primary)				
4-5	M.C.D. (Primary)	Town of Frankford			
6-7	Village				
8-9	County (Secondary)				
10-11	M.C.D. (Secondary)				
12-13	Percentage (Secondary)				
14			Blank		
15-16	TOTAL AGRICULTURAL LAND AREA	A			
	Active:				
17-18	Orchard - area	Ao			
19-20	Vineyard - area	Av			
21-22	Horticulture - area	Ah			
23-24	High-intensity cropland - area	At			
25-26	Cropland & crop. pasture - area	An	57	33	57
27-28	Pasture - area	Ap	2		
	Inactive:				
29-30	Extensive - area	Ai	5	5	5
31-32	Intensive - area	Ui			
	Livestock operations:				
33	Dairy - number	#d			
34	Poultry - number	#c			
35	Active farmsteads - number	#f			
36-37	Specialty farms - type	y			
38-39	- area	Ay			
40-41	TOTAL FORESTLAND AREA	F			
42-43	Nonproductive - area	Fb			
44-45	Productive: Nat. stands - area	Fn	72	7	78
46-47	Plantations - area	Fp			
48	Number of areas: >25 acres	#F>			
49	<25 acres	#F<			
		Fe	2		8
50-51	TOTAL WATER AREA	W			
	Lakes & ponds:				
52-53	Natural - area	Wn			
54-55	Artificial - area	Wc			
56	Natural - number	#n			
57	Artificial (<1 acre) - number	#p			
58	Artificial (>1 acre) - number	#c			
59-60	Lake & reservoir shoreline - miles	l#			
61	Streams and rivers - order	s-			
62-63	- miles	s#			
64-65	- area	As			
66-67	Wetlands: Shrub swamps - area	Wb			
68-69	Wooded swamps - area	Ww			
70-71	Marine water - area	Wm			
72			blank		
73-78	UTM Grid Cell No.				
79	[illegible]		Blank		

Col 2	Item		1960	Change	1975
1	.....		blank		
2-3	County (Primary)		--	--	--
4-5	M.C.D. (Primary)		--	--	--
6	.....		blank	--	--
7-8	County (Tertiary)		--	--	--
9-10	M.C.D. (Tertiary)		--	--	--
11-12	Percentage (Tertiary)		--	--	--
13	.....		blank	--	--
14-15	TOTAL RESIDENTIAL LAND AREA	R	--	--	--
	Residential:				
16-17	High density (<1/8 acre)	Rh	1	+4	5
18-19	Med. density (1/8-1/2 acre)	Rm	--	--	--
20-21	Low density (>1/2 acre)	Rl	--	--	--
22-23	Strip dev. (>4 per 1000')	Rs	--	--	--
24-25	Rural hamlet (<1000 pop.)	Rr	--	--	--
	Cottage:				
26-27	Shoreline devl - area	Rk	--	--	--
28-29	- miles	k#	--	--	--
30	Apartment buildings - number	#z	--	--	--
31-32	Rural non-farm residences - no.	#x	--	--	--
33-34	TOTAL COMMERCIAL, INDUST. AREA	C,I	--	--	--
35-36	Commercial: Urban	Cu	--	--	--
37-38	Shopping centers	Cc	--	--	--
39-40	Strip development	Cs	2	--	2
41-42	Industrial: Light	Il	--	--	--
43-44	Heavy	Ih	--	--	--
45-46	TOTAL OUTDOOR RECREATION AREAS	OR	--	--	--
47-49	Types (Primary)		---	---	---
50-52			---	---	---
53	Types (Other)		-	-	-
54-55	TOTAL EXTRACTIVE INDUSTRY AREA	E	--	--	--
	Open mining:				
56-57	Active - stone quarries	Eq	--	--	--
58-59	sand and gravel	Eg	--	--	--
60-61	metallic minerals	Em	--	--	--
62-63	Inactive - total area	Ea	--	--	--
64	Underground mining - type	u-	-	-	-
65-66	TOTAL PUB. & SEMI-PUB. LAND AREA	P	--	--	--
67-69	Types		---	---	---
70-71			--	--	--
72	.....		blank		
73-78	UTM Grid Cell No.		blank	--	
79	.....				
80	Order of card in data bank			2	

NAME _____ CELL NO. _____

	Item				
	.....		blank		
2-3	County (Primary)		- -	- -	- -
4-5	M.C.D. (Primary)		- -	- -	- -
6	.....		blank		
7-8	County (Quaternary)		- -	- -	- -
9-10	M.C.D. (Quaternary)		- -	- -	- -
11-12	Percentage (Quaternary)		- -	- -	- -
13	.....		blank		
14-15	TOTAL TRANSPORTATION AREA	T	- -	- -	- -
16	Highway - highest category	h-	-	-	-
17-18	- area	Th	- -	- -	- -
19-20	Railway - type of facility	r-	- -	- -	- -
21-22	- area	Tr	- -	- -	- -
23	Airport - type of facility	a-	-	-	-
24-25	- area	Ta	- -	- -	- -
26-27	Barge Canal - type of facility	b-	- -	- -	- -
28-29	- area	Tb	- -	- -	- -
30-31	Marine - port area	Tp	- -	- -	- -
32-33	- shipyard area	Ts	- -	- -	- -
34-35	- lock area	Tl	- -	- -	- -
36-38	Comm. & Util. - type	t-	- - -	- - -	- - -
39-40	- area	Tt	- -	- -	- -
41	.....		blank		
42-43	SLOPE: 0-10%		- -	- -	- -
44-45	10-25%		- -	- -	- -
46-47	>25%		- -	- -	- -
72	.....		blank		
73-78	UTM Grid Cell No.		blank	- - -	
79	.....				
80	Order of card in data bank			2	

EXAMPLE OF 1968 LUNR TABLE

TOWN OF FRANKFORT

EAST	NORTH	AO	AV	AH	AT	AC	AY	AP	AI	UI	UC	FC	FU	FP	WN	WC	WS	WB	WW
489.00	764.00	0.	0.	0.	0.	51.	0.	12.	19.	0.	0.	4.	12.	0.	0.	0.	0.	0.	0.
490.00	764.00	0.	3.	0.	0.	61.	0.	9.	1.	0.	0.	14.	15.	0.	0.	0.	0.	0.	0.
491.00	764.00	0.	0.	0.	0.	19.	0.	7.	22.	0.	0.	27.	24.	0.	0.	0.	0.	0.	0.
492.00	764.00	0.	0.	0.	0.	44.	0.	23.	7.	0.	0.	0.	25.	0.	0.	0.	0.	0.	0.
493.00	764.00	0.	0.	0.	0.	25.	0.	0.	3.	0.	0.	1.	10.	0.	0.	0.	0.	0.	0.
494.00	764.00	0.	0.	0.	0.	2.	0.	0.	2.	5.	0.	12.	0.	0.	0.	0.	0.	0.	0.
495.00	764.00	0.	0.	0.	0.	10.	0.	0.	26.	0.	0.	43.	0.	0.	0.	0.	0.	0.	0.
482.00	763.00	0.	0.	0.	0.	51.	0.	33.	3.	0.	0.	13.	0.	0.	0.	0.	0.	0.	0.
483.00	763.00	0.	0.	0.	0.	26.	0.	6.	0.	0.	0.	3.	28.	0.	0.	0.	0.	22.	0.
484.00	763.00	0.	0.	0.	0.	16.	0.	12.	15.	0.	0.	15.	35.	2.	0.	1.	0.	1.	3.
485.00	763.00	0.	0.	0.	0.	41.	0.	28.	0.	0.	0.	10.	11.	0.	0.	0.	0.	10.	0.
486.00	763.00	0.	0.	0.	0.	31.	0.	44.	0.	0.	0.	2.	5.	0.	0.	0.	0.	1.	15.
487.00	763.00	0.	0.	0.	0.	33.	0.	40.	0.	0.	0.	0.	14.	0.	0.	0.	0.	0.	13.
488.00	763.00	0.	0.	0.	0.	31.	0.	20.	2.	0.	0.	44.	3.	0.	0.	0.	0.	0.	0.
489.00	763.00	0.	0.	0.	0.	18.	0.	30.	35.	0.	0.	4.	13.	0.	0.	0.	0.	0.	0.
490.00	763.00	0.	0.	0.	0.	5.	0.	13.	22.	0.	0.	8.	52.	0.	0.	0.	0.	0.	0.
491.00	763.00	0.	0.	0.	0.	8.	0.	8.	0.	0.	0.	22.	62.	0.	0.	0.	0.	0.	0.
492.00	763.00	0.	0.	0.	0.	17.	0.	10.	1.	0.	0.	18.	54.	0.	0.	0.	0.	0.	0.
493.00	763.00	0.	0.	0.	0.	44.	0.	10.	6.	3.	0.	3.	3.	0.	0.	1.	0.	0.	0.
494.00	763.00	0.	0.	0.	0.	12.	0.	19.	3.	3.	0.	3.	8.	0.	0.	0.	0.	0.	0.
495.00	763.00	0.	0.	0.	0.	10.	0.	0.	3.	7.	2.	41.	2.	0.	0.	0.	0.	0.	0.
484.00	762.00	0.	0.	1.	0.	36.	0.	9.	5.	0.	0.	24.	12.	0.	0.	0.	0.	0.	13.
485.00	762.00	0.	0.	2.	0.	29.	0.	15.	15.	0.	0.	19.	5.	0.	0.	0.	0.	7.	0.
486.00	762.00	0.	0.	0.	0.	30.	0.	21.	0.	0.	0.	11.	22.	0.	0.	0.	0.	0.	0.
487.00	762.00	0.	0.	0.	0.	42.	0.	11.	0.	0.	0.	10.	25.	8.	0.	0.	0.	0.	4.
488.00	762.00	0.	0.	0.	0.	18.	0.	12.	5.	0.	0.	8.	56.	1.	0.	0.	0.	0.	0.
489.00	762.00	0.	0.	0.	0.	6.	0.	3.	6.	0.	0.	16.	67.	0.	0.	0.	0.	0.	0.
490.00	762.00	0.	0.	0.	0.	5.	0.	9.	17.	0.	0.	10.	59.	0.	0.	0.	0.	0.	0.
491.00	762.00	0.	0.	0.	0.	16.	0.	1.	4.	0.	0.	28.	51.	0.	0.	0.	0.	0.	0.
492.00	762.00	0.	0.	0.	0.	26.	0.	11.	2.	0.	0.	12.	49.	0.	0.	0.	0.	0.	0.
493.00	762.00	0.	0.	0.	0.	21.	0.	21.	4.	0.	0.	34.	19.	0.	0.	0.	0.	0.	0.
494.00	762.00	0.	0.	0.	0.	57.	0.	9.	5.	0.	0.	6.	19.	0.	0.	0.	0.	0.	0.
487.00	761.00	0.	0.	0.	0.	6.	0.	3.	7.	0.	0.	22.	58.	0.	0.	0.	0.	0.	0.
488.00	761.00	0.	0.	0.	0.	45.	0.	6.	7.	0.	0.	25.	17.	0.	0.	0.	0.	0.	0.
489.00	761.00	0.	0.	0.	0.	31.	0.	30.	1.	0.	0.	3.	35.	0.	0.	0.	0.	0.	0.
490.00	761.00	0.	0.	0.	0.	41.	0.	35.	3.	0.	0.	10.	11.	0.	0.	0.	0.	0.	0.
491.00	761.00	0.	0.	0.	0.	7.	0.	2.	31.	0.	0.	37.	23.	0.	0.	0.	0.	0.	0.
492.00	761.00	0.	0.	0.	0.	34.	0.	9.	29.	0.	0.	6.	22.	0.	0.	0.	0.	0.	0.
493.00	761.00	0.	0.	0.	0.	5.	0.	3.	0.	0.	0.	36.	56.	0.	0.	0.	0.	0.	0.
494.00	761.00	0.	0.	0.	0.	37.	0.	36.	7.	0.	0.	3.	17.	0.	0.	0.	0.	0.	0.
490.00	760.00	0.	0.	0.	0.	17.	0.	12.	19.	0.	0.	20.	32.	0.	0.	0.	0.	0.	0.
491.00	760.00	0.	0.	0.	0.	14.	0.	0.	22.	0.	0.	26.	36.	0.	0.	0.	0.	0.	0.

EXAMPLE OF UPDATED MAP OVERLAY